

REMARKS

Summary Of The Office Action & Formalities

Claims 1-24 are all the claims pending in the application. No new matter is added.

The prior art rejections are summarized as follows:

1. Claims 1, 2, 8, 11-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eninger et al. (U.S. 5,036,905) in view of Leidinger (U.S. 5,101,884).

2. Claims 9 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eninger et al. (U.S. 5,036,905) in view of Leidinger (U.S. 5,101,884) as applied to claims above, and further in view of Chalmers (U.S. 4,738,304).

Claims 3-7, 10, and 23 are indicated as being allowable if rewritten in independent form.

Applicant respectfully traverses the rejections under 35 U.S.C. § 103.

Claim Rejections - 35 U.S.C. § 103

1. Claims 1, 2, 8, 11-22 And 24 Over Eninger et al. (U.S. 5,036,905) In View Of Leidinger (U.S. 5,101,884).

In rejecting claims 1, 2, 8, 11-22 and 24 over Eninger et al. (U.S. 5,036,905) in view of Leidinger (U.S. 5,101,884), the grounds of rejection state:

Eninger discloses a heat exchanger for satellites comprising:

- a satellite having a support structure that includes a heat transfer system electronic module's at least one heat

transfer means for transferring heat dissipated by the electronic module;

- connector means for connecting the transfer means to the heat transfer system of the structure in such a manner as to enable the supply of heat exchange fluid to the transfer means and the transfer of heat dissipated by the electronic module to the radiator;
- a plurality of transfer means and a plurality of connector means adapted to be connected to a corresponding plurality of heat transfer systems with their own specific power dissipation capacity and temperature range regulation capacity;
- an evaporator assembly comprising at least one tube for supplying the assembly with heat-exchange fluid in the liquid state, and a vapor manifold, and connector means for the tube and the manifold adapted to connect them respectively to a supply pipe of heat-exchange fluid from a tank and to a vapor transport line for conveying vapor to the condenser of the heat system;
- the structure is provided with mechanical, thermal and electrical connection means adapted to connect a plurality of radiators.
- each radiator is associated with a group of equipments corresponding to a specific temperature and therefore necessitating appropriate cooling;
- wherein the module fluid conduit is provided at a position proximate the electronic module;
- the module fluid conduit has a common surface with the electronic module.
- the main fluid conduit has a locking device that shuts off the fluid connection between the module fluid conduit and the main fluid conduit.

Eninger's invention shows a valve symbol (x), but the specification is silent to its description and teachings.

However, Leidinger teaches the use of connectors (19 and 20) for connecting the heat transfer system.

Given the teachings of Leidinger, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cooling system of Eninger with connectors (19 and 20) for connecting the heat transfer system.

Doing so would provide a safe and reliable means of connecting the fluid modules to the heat transferring system.

Office Action at pages 2-4.

“To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP §2142. Section 2142 further states that “[t]he initial burden is on the examiner to provide some suggestion of desirability of doing what the inventor has done.”

Furthermore, as the Federal Circuit reminds us, the USPTO is held to a rigorous standard when trying to show that an invention would have been obvious in view of the combination of two or more references. See, In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), citing, e.g., In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”).

The Federal Circuit goes on to emphasize that the “need for specificity pervades this authority.” *In re Lee* at 1433 (emphasis added) (citing *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”).

Applicants respectfully submit that the current grounds of rejection do not satisfy the Federal Circuit’s rigorous standard for demonstrating that the claimed invention would have been obvious in view of the combination of the applied references.

Regarding claim 1, while the Examiner has *asserted* that there is motivation to modify Eninger in view of Leidinger, the grounds of rejection fail to show where in the disclosure of these references there is an actual suggestion or motivation for the alleged modification. *In re Mills* 916 F.2d 680, 682 (Fed. Cir. 1990). Indeed, there is no disclosure in Eninger that even suggests a need for the connectors of Leidinger. Eninger mentions an interconnector, but as evidenced by the drawings and the specification, it is not at all similar in structure or type to the connector recited in claim 1. Moreover, while both references disclose that they may be used on a spacecraft, such *general* common use alone is clearly insufficient to create the motivation to modify the Eninger in the manner set forth in the grounds of rejection.

Additionally, Applicant traverses the Examiner’s rejection of claim 1 because the references cited do not teach or suggest all of the claimed elements. *In re Royka*, 490 F.2d 981 (CCPA 1974). That is, the modification or any combination of the two references would not result in the current equipment recited in claim 1. Combining the two references would, at most,

result in the heat exchanger of Leidinger being used in the system found in Eninger. Lifting the connectors *only*, and somehow applying them to the system of Eninger, as argued in the grounds of rejection, would not result in the use of connectors between the fluid pipe and the heat exchange area as claimed. As such, the rejection appears to be based on the use of improper hindsight to reconstruct the present invention using Applicant's disclosure as a roadmap.

Moreover, the Examiner states that Eninger teaches the use of an electronic module as part of the invention, but nowhere in this reference is there a disclosure of an electronic module. More importantly, as noted above, the connectors recited in claim 1 are not taught by the prior references. The Leidinger reference merely discloses a heat exchanger for use in a spacecraft. The connectors disclosed in that reference are nothing more than inlet and outlet ports for the cooling liquid of the heat exchanger. On the other hand, the connectors in the present invention actually connect the main heat exchange fluid pipe to the area where the heat transfer actually occurs. This is an entirely different type of connector than that taught in the Leidinger reference.

Furthermore, claim 1 recites means-plus-function clauses, which must be interpreted under 35 U.S.C. § 112, Paragraph 6. *See In re Donaldson*, 16 F.3d 1189 (Fed. Cir. 1994) (holding that the Examiner may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination.). As such, the connectors in Claim 1 are entitled to an interpretation under 35 U.S.C. § 112, paragraph 6.

Claims 2, 8, and 11-18 are allowable because of their dependency from claim 1.

Additionally, claim 2 is allowable because the Eninger reference does not teach or suggest the use of a plurality of heat transfer systems with their own specific power dissipation capacity and temperature range regulation capacity.

Claim 8 is allowable as neither Eninger nor Leidinger teach or suggest the use of an external enclosure of the evaporator tube adapted to have an optimum surface with the module. As neither reference mentions an electronic module, neither reference can be said to teach or suggest this particular element of the invention.

Claim 12 is allowable as the applied references, taken individually or in combination, do not teach or suggest the use of electrical connections adapted to connect a plurality of radiators. The references do not mention electrical connections of the type used in the present invention; the present invention claiming electrical connections for the electrical module being cooled by the heat transfer system.

Claim 13 is allowable as the applied references, taken individually or in combination, do not teach or suggest that each radiator is associated with a group of equipments corresponding to a specific temperature and therefore necessitating appropriate cooling. Eninger only teaches that a grouping of radiators may be used for heat transfer, while the current invention uses a plurality of radiators, individually associated with a specific group of equipments for heat transfer purposes for the necessary appropriate cooling.

Regarding claim 19, the grounds of rejection fail to address the features of this claim. In particular, the grounds of rejection do not indicate where the elements from claim 19 are found in any of the applied references. However, even had the grounds of rejection addressed the

elements of claim 19, the applied references would not render this claim obvious, because none of the applied references, whether taken alone or in combination, teaches or suggest all of the elements of the claim.

Again, Eninger does disclose an electronic module that generates heat, while Leidinger does not disclose a “connector that couples the module fluid conduit to the main fluid conduit, the connector structured to be decoupled from the main fluid conduit.” The connectors relied upon by the Examiner are not structured to detach a module fluid conduit from a main fluid conduit. In particular, the Leidinger reference does not use a main conduit nor a module conduit. The cited connectors involve entirely different structure and do not function in the same manner as those recited in claim 19.

Claims 20-22 and 24 are allowable at least because of their dependency from claim 19. Additionally, claim 20 is allowable because the applied reference, taken individually or in combination, do not disclose the use of the module fluid conduit provided at a position proximate the electronic module.

Claim 21 is allowable because the applied reference, taken individually or in combination, do not disclose the electronic module and its relationship to the module fluid conduit. Neither the specification nor the claims of this patent discuss placement of the module fluid conduit in relation to the electronic module, let alone in the manner recited in claim 21.

Claim 22 is allowable as neither Eninger nor Leidinger shows the use of a locking device to shut off the fluid connection between the module fluid conduit and the main fluid conduit. The connectors in the Leidinger reference, cited by the Examiner as allegedly teaching the

feature are not locking devices that can shut off the fluid connection. In fact, they are the inlet and outlet ports on the heat exchanger, and would thus *teach away* from the present invention.

Claim 24 is allowable because neither of the cited references teaches that their equipment is a payload of the satellite as in the present invention. Because Leidinger is a heat exchanger, it cannot be considered payload for the satellite, and while Eninger is a heat dissipating system, the reference does not teach the use of electronic modules and signal transports necessary to be payload. Claim 24 is not taught by the references.

2. Claims 9 And 15-17 Over Eninger et al. (U.S. 5,036,905) In View Of Leidinger (U.S. 5,101,884) As Applied To Claims Above, And Further In View Of Chalmers (U.S. 4,738,304).

Without agreeing to or substantively commenting on the grounds of rejection, Applicant submits that claims 9 and 15-17 are all allowable due to their dependency from claim 1.

Allowable Subject Matter

Applicant notes that claims 3-7, 10 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

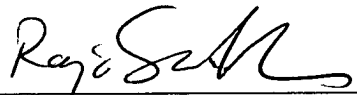
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Response Under 37 C.F.R. § 1.116
U.S. Application No. 10/676,117

Attorney Docket No.: Q77684

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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CUSTOMER NUMBER

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